

Amendments to the Claims:

1 - 7. (canceled)

8. (currently amended) A downhole hammer drill including:

a drive sub or chuck mounted on an air hammer drill casing; and

a reverse circulation drill bit having a bit shank mounted in splined relation to said drive sub or chuck and a bit head adapted to extend below said drive sub or chuck,

an air hammer motor in the air hammer drill casing, said motor exhausting air down the splines, and

a plurality of upper air passages each opening from a spline in the region of the bit head and each inclined toward the axis of the bit and extending along the bit shank away from said bit head to intersect a sample recovery bore of said bit,

said upper air passages being configured to direct substantially all of the air from the air passages opening from said splines as sample accelerating air ~~from the said openings from a spline~~ up the sample recovery bore.

9. (Original) A downhole hammer drill according to claim 8, wherein spline-borne exhaust air is also directed through the bit head by at least one lower air passage therethrough.

10. (Original) A downhole hammer drill according to claim 9, wherein said at least one lower air passage has a lower end directing air to the cutting face of the bit through an outlet through the side of the bit head adjacent a gauge row thereof and communicating with a channel passing from the outlet to the cutting face.

11. (previously presented) A downhole hammer drill according to claim 10, wherein said at least one lower air passage is a continuation of each of the upper air passages.

12. (Original) A downhole hammer drill according to claim 11, wherein each said upper air passage and lower air passage are co-formed by a drilling from the gauge row at the location of the button, through the bit head and into the shank, to intersect the sample recovery bore.

13. (Original) A downhole hammer drill according to claim 8, wherein each said upper air passage is formed by a drilling from the position of a gauge row at the location of a carbide button, through the bit head and into the shank, to intersect the sample recovery bore, and wherein said drilling is counter bored at its lower end to form the carbide button mounting socket.

14. (previously presented) A downhole hammer drill according to claim 8, further comprising a dynamic air seal to a borehole formed by the downhole hammer drill in use.

15. (previously presented) A downhole hammer drill including:

- a drive sub or chuck mounted on an air hammer drill casing; and
- a reverse circulation drill bit having a bit shank mounted in splined relation to said drive sub or chuck and a bit head adapted to extend below said chuck, an air hammer motor exhausting down the splines, an exhaust air passage formed in said bit shank adjacent said bit head and adapted to receive air exhausted at the lower end of the bit shank splines, an upper air passage opening from said exhaust air passage in the region of the bit head and inclined toward the axis of the bit and extending along the bit shank away from said bit head to intersect a sample recovery bore of said bit, said upper air passage being configured to direct substantially all of the sample accelerating air from the said exhaust air passage up the sample recovery bore, said bit head having at least one lower air passage therethrough and intersecting said exhaust air passage, said lower air passage having a lower end directing air to the cutting face of the bit

through an outlet through the side of the bit head adjacent a gauge row thereof communicating with a channel passing from said outlet to said cutting face.

16. (previously presented) A downhole hammer drill according to claim 15, further comprising a dynamic air seal to a borehole formed by the downhole hammer drill in use.

17. (previously presented) A downhole hammer according to claim 8, wherein said upper air passages each open from a spline in the region of the bit head via an exhaust air passage formed in said bit shank adjacent said bit head.

18. (previously presented) A downhole hammer drill according to claim 17, wherein spline-borne exhaust air is also directed from the exhaust air passage through the bit head by at least one lower air passage.